

ADVANCE status

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U.S. DEPARTMENT OF
ENERGY

Office of
Science

ADVANCE quality assurance system for ENDF

- On every commit of every evaluation in ENDF
 - Check out evaluation
 - Run through a battery of tests
 - Process with customer processing codes
 - Generate comparison plots
 - Generate HTML report of evaluation

- **Automation is better!**

- Find data problems before the customers!
- Far faster/better than old PHASE I review

- **Available at** <http://www.nndc.bnl.gov/endl/b7.dev/qa/index.html>

The image displays a screenshot of the ADVANCE web interface. At the top, there is a navigation bar with 'OVERVIEW', 'ENDF PROJECT', 'ADVANCE', and 'NNDc'. Below this, the main header reads 'ADVANCE: The ENDF Continuous Integration System' and 'BROOKHAVEN NATIONAL LABORATORY'. The central content area is titled 'ENDF B-VII.dev ENDF/B Development' and includes a 'Latest Updates' section with several entries. Below the updates, there are tabs for 'Neutrons', 'Decay', 'Charged particles', 'Photonuclear', and 'Atomic'. The 'Neutrons' tab is active, showing 'Neutrons sublibraries' with icons for 'Neutrons Sublibrary', 'Neutron-induced Reaction Yields Sublibrary', 'Standards Sublibrary', and 'Thermal Neutron Scattering Sublibrary'. Below the sublibraries, there is a 'Build time: 2012-04-30 18:52:01 294282' and 'Last file: neutrons.br'. A 'Periodic Table' tab is also visible, showing a standard periodic table with a blue header. At the bottom, there is a plot titled 'Pu241(n,el)' showing 'Cross Section' on a logarithmic y-axis (from 10⁰ to 10³) versus 'E (eV)' on a logarithmic x-axis (from 10⁻³ to 10⁶). The plot contains several data series, including a blue line and a black line, representing different data sets or evaluations.

The idea seems to be catching on



Nuclear Energy Agency



Building Enhanced Nuclear Data Services at the Data Bank

*Development of an automated platform for verification, testing,
processing and benchmarking of*

Nuclear Data

F. Michel-Sendis, C.J. Díez, O. Cabellos
NEA Data Bank

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Modest changes since mini-CSEWG in May

■ FUDGE

- Under active development, preparing for next major release, due ~Dec.
- Therefore, it is currently “broken”.
- Several checks converted to “FIXME” status
 - Energy balance
 - Mass, threshold, Q-value
 - Normalizations

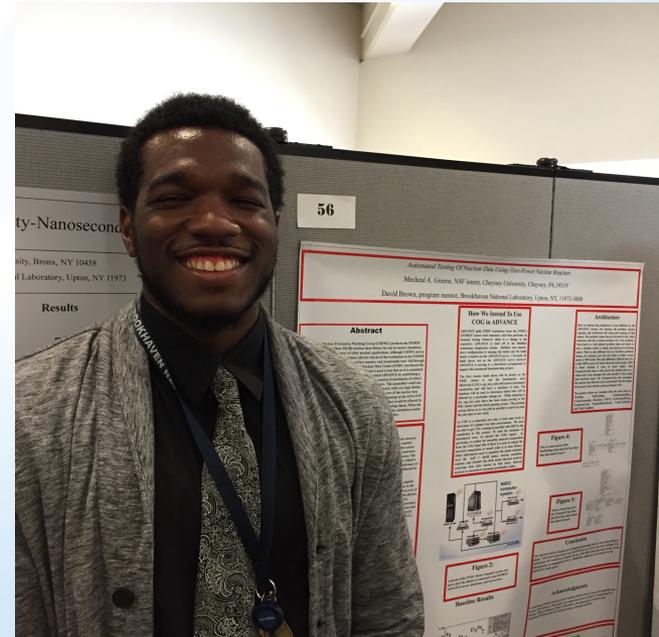
■ NNDC checking codes

- At least one bug has crept in and I haven't had time to track it down

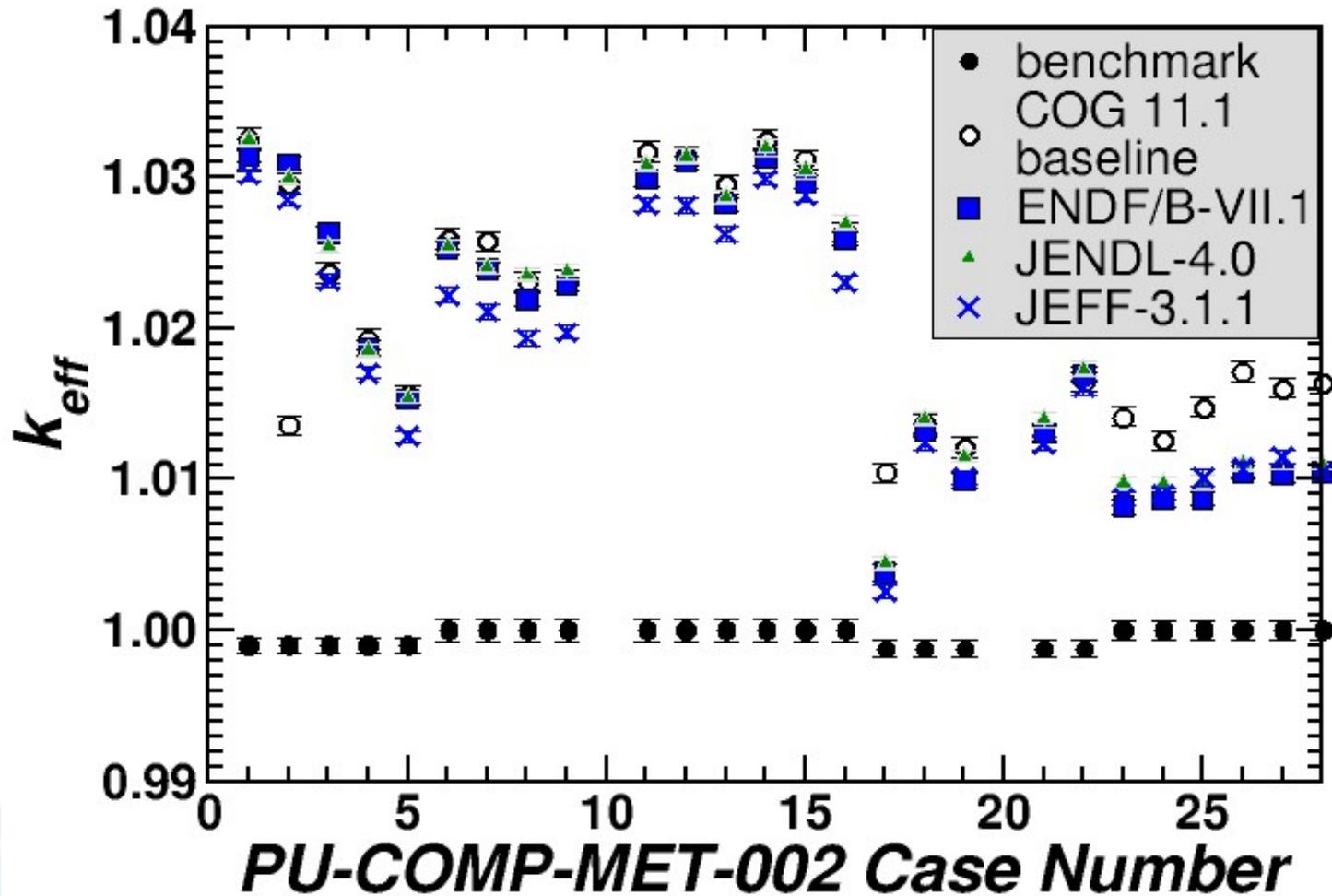
■ NJOY2012: up to revision 50, ADVANCE still at 10

Not all changes are in the wrong direction

- **M. Greene (Cheney Univ.) began standing up an automated benchmarking capability for ADVANCE**
- **COG (LLNL) wrapped in cnp_test_suite (LLNL)**
 - Understands material specifications in input decks and may search on them
 - Can parse COG outputs files
- **Have built relational database of test decks:**
 - Baseline results (keff)
 - 359 HEU cases
 - 145 Pu cases



Typical results: COG Baseline (ENDF/B-VII.1) vs. Van Der Marck



There is a lot to do yet, so hopefully Mecheal will be back next summer ;)

- **Connection to BuildBot**
- **Indexing of modified libraries by COG11.1-LibMaker**
 - For neutrons, this is “simple”
 - For TSL data, it is unclear what to do (yet)
- **Results database**
- **Integral validation report tab on ADVANCE website**
- **Maybe even starting on same capability for MCNP**

Thanks to

- **Dave Heinrichs and Chuck Lee (LLNL)**
 - COG11.1
 - COG11.1-LibMaker
 - COG's test suite
- **Pavlos Vranas, Marie-Anne Descalle, D.A. Brown (LLNL)**
 - cnp_test_suite
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